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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/786,781	02/25/2004	Sheng-Hsin Hu	K-C 16029.1	3777

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EXAMINER

TSOY, ELENA

ART UNIT	PAPER NUMBER
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1762

DATE MAILED: 03/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/786,781	Applicant(s) HU ET AL.	
	Examiner Elena Tsoy	Art Unit 1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11, 13-18 and 20-23 is/are pending in the application.
- 4a) Of the above claim(s) 5 and 14-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-11, 13, 17, 18 and 20-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/09/2006 has been entered.

Response to Amendment

2. Amendment filed on 2/09/2006 has been entered. New claim 23 has been added. Claims 1-11, 13-18, 20-23 are pending in the application. Claims 5, 14-16 are withdrawn from consideration as directed to a non-elected invention.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-4, 6, 8-11, 13, 17, 18, 20-21, 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiltzik et al (US 20030082382).

Hiltzik et al are applied here for the same reasons as set forth in paragraph 2 of the Office Action mailed on 6/13/2005. Hiltzik et al further teach that 4.3 wt % coating (average of 1.0 and **7.7 wt %** (from *wet-basis* weight gain and emulsion solids sprayed, respectively) of the BAX

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1100 shaped active carbon achieved a total elimination of dusting, with only a 6.4% reduction of BWC (See P 57). Hiltzik et al teach that a coating may be produced by spraying an emulsion of the polymer onto exposed surfaces of the activated carbon material heated to 250⁰F while tumbling in successive doses, and then drying overnight the coated activated carbon material at 220⁰F (See P36). Therefore, the coating before drying ("wet" coating), produced in this manner, would contain not more than 35 wt% of solvent because the solvent would quickly evaporate while the coating liquid was being sprayed onto the heated carbon particles. Therefore, even considering that 2.7 wt% of 7.7 wt % of wet coating (i.e. 35 wt% of total weight of the coated carbon) is a solvent, at least 5wt% of dry coating is applied over activated carbon. Hiltzik et al teach that the coated pellets retained 94-100% of the uncoated pellet butane activity (butane adsorption) and 88-100% of the uncoated pellet butane working capacity (BWC) (See P20). For example, as shown in Table IV, Run 8 having up to at least 5wt% of dry coating retains 97% of Butane Activity) and has only 6.4% reduction of BWC compared to uncoated activated carbon (See Table IV and P57).

Although Hiltzik et al teach that the coated activated carbon is effective for automotive emission control, Hiltzik et al are silent about claimed Relative Adsorption Efficiency with respect to claimed particular compounds (Claims 1, 13 and 20).

It is well known in the art that historically, performance of activated carbon in adsorption applications has been characterized by determination of the Butane Working Capacity (BWC) of Activated Carbon, which provides a *relative measure of the effectiveness* of the tested activated carbons on other adsorbates. In other words, the BWC would provide a

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relative measure of the effectiveness of the tested activated carbons toward *any* compound *capable of being adsorbed by the activated carbon* including claimed particular compounds.

It is the Examiner's position that (at least 5 wt%) coated activated carbon of Hiltzik et al would show claimed Relative Adsorption Efficiency toward claimed particular compounds *inherently* since coated activated carbon of Hiltzik et al having at least 5 wt% of dry coating retains 97% of a Relative Adsorption Efficiency toward Butane and has only 6.4% reduction of BWC, i.e. shows adsorptive capacity very close to the adsorptive capacity of *uncoated* activated carbon.

5. Claims 1-4, 6, 8-11, 13, 17, 18, 20-21, 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiltzik et al in view of Karapasha (WO9112030).

Hiltzik et al are applied here for the same reasons as above. Claimed invention would be obvious over Hiltzik et al in view of Karapasha for the same reasons as set forth in paragraph 3 of the Office Action mailed on 6/13/2005.

6. Claims 1-4, 6-11, 13, 17, 18, 20-21, 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karapasha in view of Hiltzik et al.

Karapasha is applied here for the same reasons as set forth in paragraph 4 of the Office Action mailed on 6/13/2005. Hiltzik et al are applied here for the same reasons as above. The coated activated carbon of Karapasha in view of Hiltzik et al would show claimed Relative Adsorption Efficiency toward claimed particular compounds *inherently* because show that 5wt% of coating would almost preserve adsorptive capacity of *uncoated* activated carbon.

7. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hiltzik et al /Karapasha in view of Hiltzik et al/, further in view of Cavezzan et al (US 4,954,539).

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Hiltzik et al/Karapasha in view of Hiltzik et al/ are applied here for the same reasons as above. Cavezzan et al are applied here for the same reasons as set forth in paragraph 5 of the Office Action mailed on 6/13/2005. Claimed invention would be obvious over Hiltzik et al/Karapasha in view of Hiltzik et al/ further in view of Cavezzan et al for the same reasons as set forth in paragraph 5 of the Office Action mailed on 6/13/2005.

8. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hiltzik et al /Hiltzik et al in view of Karapasha/Karapasha in view of Hiltzik et al/, and further in view of Hogenson (US 4,643,783).

Hiltzik et al /Hiltzik et al in view of Karapasha/Karapasha in view of Hiltzik et al/ are applied here for the same reasons as above. Claimed invention would be obvious over Hiltzik et al /Hiltzik et al in view of Karapasha/Karapasha in view of Hiltzik et al/, and further in view of Hogenson for the reasons of record set forth in paragraph 6 of the Office Action mailed on 6/13/2005.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

McLaughlin (US 20030206848) teaches that historically, activated carbon has been characterized by a number of ASTM tests, with the results of those tests correlating to performance in **adsorption** applications such as ASTM D 5228: Determination of the Butane Working Capacity (BWC) of Activated Carbon. As noted in the Significance and Use section of ASTM Designation: D 5228-92: "The BWC can also provide a *relative measure of the effectiveness* of the tested activated carbons on **other adsorbates**". See column 13, lines 59-67.

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Response to Arguments

10. Applicant's arguments with respect to claims 1-11, 13-18, 20-23 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elena Tsoy whose telephone number is 571-272-1429. The examiner can normally be reached on Monday-Thursday, 9:00AM - 7:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Elena Tsoy
Primary Examiner
Art Unit 1762

ELENA TSOY
PRIMARY EXAMINER
E Tsoy

March 6, 2006